

## Introduction to Papers Resulting from the 1989 Hawaii Institute of Marine Biology Summer Program

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This issue of *Pacific Science* is the result of research carried out by participants of the 1989 Hawaii Institute of Marine Biology Summer Program. These HIMB summer programs have a long history. In 1967 a summer workshop on coelenterate biology was conducted by H. Lenhoff, L. Davis, and L. Muscatine. Student research resulting from that program was published and provided an important contribution to our understanding of coelenterate symbiotic associations: *Experimental Coelenterate Biology*. In 1968 Dr. E. A. Kay led a summer course on molluscan biology. Again, the student research was of the highest quality. Dr. L. Muscatine returned in 1979 with Dr. R. Trench to present another program on coelenterate symbiotic associations along with HIMB staff. As with the previous summer courses, the quality of the student research and the lively and close interaction among the instructors and students made the 1979 program a memorable experience for all participants.

The great success of these summer programs showed the suitability of the Coconut Island facility for exposing students to the unique coral reef environment of Kaneohe Bay. Most important, this combination, under the guidance of outstanding authorities in a wide range of areas of expertise, resulted in the development of truly outstanding research projects. The decision was made to make summer programs a regular offering of HIMB. It was particularly fortunate that HIMB had long enjoyed a close relationship with the family of Edwin W. Pauley, with whom the laboratory shared Coconut Island. Mr. Pauley, through the Pauley Foundation, undertook to generously support these summer programs on a regular basis beginning with the summer of 1983 and continuing annually to the present.

The 1989 summer program was dedicated to the study of the metabolism of coral reefs. This broad and general topic was deliberately chosen because of the increasing awareness that only by studying ecological systems at all levels could we gain an integrated understanding of the operational function of these complex systems. Coral reefs, being particularly complex, made this approach even more reasonable. General questions included the following: the effects of chemical pollutants on reef organisms; biological interactions among species, such as predation, competition, and parasitism; and the level of physiological responses to physical parameters such as temperature, dissolved gases, and salinity.

The program was fortunate to have had the dedicated participation of Dr. D. Crosby of U. C. Davis, Dr. D. Doerge of the U. H. Agricultural Biochemistry Department, Dr. P. Falkowski of Brookhaven National Laboratory, Drs. R. Richmond and V. Paul of the University of Guam, Dr. Z. Dubinsky of Bar-Ilan University, and Dr. S. Coles of King Fahd University of Petroleum

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and Minerals, as well as the faculty from the Zoology and Oceanography departments of the University of Hawaii.

The papers in this issue were in most cases meant to identify a problem or to clarify a relationship so that the students could later develop their research projects, many of which will be completed at their own institutions. Nevertheless, each of these papers presents an aspect of the function of coral reefs that is complete in itself and, more important, a genuine contribution to our understanding of these biologically and geologically fascinating systems.